Claims

[c1] I claim as my invention:

1. A golf ball comprising:

a core; and

a cover formed over the core, the cover composed of a thermosetting polyurethane material formed from reactants comprising at least one polyurethane prepolymer and a curative blend comprising N,N"-dialkylamino-diphenyl-methane and a second curing agent;

wherein the cover has an aerodynamic surface geometry thereon.

[c2] 2.The golf ball according to claim 1 further comprising at least one boundary layer disposed between the core and the cover.

[c3] 3. The golf ball according to claim 1 wherein the polyurethane prepolymer is a polypropylene glycol terminated toluene diisocyanate prepolymer with a nitrogen-carbon-oxygen content ranging from 3.0% to 6.0%.

[c4] 4. The golf ball according to claim 2 wherein the boundary layer is composed of a blend of ionomers.

[c5] 5. The golf ball according to claim 1 wherein the polyurethane prepolymer is a polytetramethylene ether glycol terminated toluene diisocyanate prepolymer with a nitrogen-carbon-oxygen content ranging from 3.75% to 7.0%.

[c6] 6.A golf ball comprising:

a core comprising a polybutadiene mixture;

a boundary layer formed over the core; and

a cover formed over the boundary layer, the cover composed of a thermosetting polyurethane material formed from reactants comprising at least one polyurethane prepolymer and a curative blend comprising N,N"-dialkylamino-diphenyl-methane in an amount of 25 to 75 parts per one hundred parts of the curative blend and 4,4"-methylenebis-(2,6-diethyl)-aniline in an amount of 25 to 75 parts per one hundred parts of the curative blend;

wherein the cover has an aerodynamic surface geometry thereon.

[c7] 7.A golf ball comprising:

a core; and

a cover formed over the boundary layer, the cover composed of a thermosetting polyurethane material formed from reactants comprising polytetramethylene ether glycol terminated toluene diisocyanate prepolymer and a curative blend comprising N,N"-dialkylamino-diphenyl-methane in an amount of 25 to 75 parts per one hundred parts of the curative blend and 4,4"-methylenebis-(2,6-diethyl)-aniline in an amount of 25 to 75 parts per one hundred parts of the curative blend;

wherein the cover has an aerodynamic surface geometry thereon.

[c8] 8.A golf ball comprising:

a solid core comprising a polybutadiene mixture;

a boundary layer formed over the core, the boundary layer comprising a blend of ionomer materials; and

a cover formed over the boundary layer, the cover composed of a thermosetting polyurethane material formed from reactants comprising polytetramethylene ether glycol terminated toluene diisocyanate prepolymer and a curative blend comprising N,N"-dialkylamino-diphenyl-methane in an amount of 25 to 75 parts per one hundred parts of the curative blend and 4,4"-methylenebis-(2,6-diethyl)-aniline in an amount of 25 to 75 parts per one hundred parts of the curative blend;

wherein the cover has an aerodynamic surface geometry thereon.

[c9] 9.The golf ball according to claim 8 wherein the blend of ionomer materials of the boundary layer is composed of a sodium neutralized copolymer of ethylene and methacrylic acid, a zinc neutralized copolymer of ethylene and methacrylic acid and a magnesium neutralized terpolymer of ethylene, methacrylic acid and n-butyl acrylate.

[c10] 10.A golf ball comprising:

a core comprising a polybutadiene mixture, the core having a diameter ranging from 1.35 inches to 1.64 inches and having a PGA compression ranging from 50 to 90;

a boundary layer formed over the core, the boundary layer composed of a blend

of ionomer materials, the boundary layer having a thickness ranging from 0.020 inch to 0.075 inch, the blend of ionomer materials having a Shore D hardness ranging from 50 to 75 as measured according to ASTM-D2240; and

a cover formed over the boundary layer, the cover composed of a thermosetting polyurethane material formed from reactants comprising polytetramethylene ether glycol terminated toluene diisocyanate prepolymer and a curative blend comprising N,N"-dialkylamino-diphenyl-methane in an amount of 25 to 75 parts per one hundred parts of the curative blend and 4,4"-methylenebis-(2,6-diethyl)-aniline in an amount of 25 to 75 parts per one hundred parts of the curative blend, wherein the thermosetting polyurethane material has a Shore D hardness ranging from 30 to 60 as measured according to ASTM-D2240, a thickness ranging from 0.015 inch to 0.044 inch, and an aerodynamic surface geometry thereon.

[c11] 11.A method for forming a cover for a golf ball, the method comprising:

blending N,N"-dialkylamino-diphenyl-methane in an amount of 25 to 75 parts per one hundred parts of a curative blend and 4,4"-methylenebis-(2,6-diethyl)-aniline in an amount of 25 to 75 parts per one hundred parts of the curative blend to form the curative blend;

mixing the curative blend with a polyurethane prepolymer in a mixing chamber to create pre-polyurethane mixture;

dispensing the pre-polyurethane mixture into a first hemispherical cavity and a second hemispherical cavity;

placing a golf ball precursor product into the first hemispherical cavity with the pre-polyurethane mixture therein;

mating the first hemispherical cavity with the second hemispherical cavity; and

curing the pre-polyurethane mixture to create a polyurethane cover on the golf ball precursor product.

[c12] 12.A golf ball comprising:

a core; and

a cover formed over the core, the cover composed of a thermosetting polyurethane material formed from reactants comprising at least one polyurethane prepolymer and a curative blend comprising a first curing agent in

an amount of 25 to 75 parts per one hundred parts of the curative blend and a second curing agent in an amount of 25 to 75 parts per one hundred parts of the curative blend, wherein the first curing agent and the second curing agent each have the same equivalent weight;

wherein the cover has an aerodynamic surface geometry thereon..